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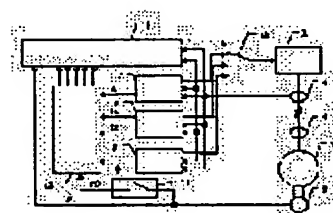
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(54) PM MOTOR CONTROLLER WITH CONSTANT MEASUREMENT SETTING FUNCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To obviate much time and troubles, various power supplies and measuring instruments for setting electrical constants by providing a function of automatically measuring electrical constants, such as the coil resistance of a permanent magnet synchronous motor, inductance in the direction of a permanent magnet, inductance in the vertical direction, and the magnetic flux of the permanent magnet.

SOLUTION: A direct current testing means 7 is fed with the outputs of an input current detector 3 and an input voltage detector 4, and determines the coil resistance R of a PM motor 5 and outputs the result to a setting storing means 12. An alternating current testing means 8 divides input current and input voltage into a-axis (an axis of a permanent-magnet synchronous motor in an arbitrary direction) components and b-axis (an axis perpendicular to the a-axis) components and outputs inductance L_d and L_q in the direction of a permanent magnet and in the direction perpendicular thereto. A rotation testing means 9 determines the magnetic flux ϕ of the permanent magnet from Equation I when the PM motor 5 is at no load and from Equation II when the PM motor is not necessarily at no load and outputs the result. (In the equations, V_a and I_a are the input voltage and input current of the a-axis; and V_b and I_b are the input voltage and input current of the b-axis.).



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